

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference A/N-901/961-40	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/PL 02/ 00077	International filing date (day/month/year) 25/10/2002	(Earliest) Priority Date (day/month/year) 26/10/2001
Applicant AMMONO Sp. z o.o.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior-art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :
 - contained in the international application in written form.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority in written form.
 - furnished subsequently to this Authority in computer readable form.
 - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. Certain claims were found unsearchable (See Box I).

3. Unity of invention is lacking (see Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/02/00077

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C30B9/00 C30B29/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C30B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 796 657 A (THOMSON CSF) 26 January 2001 (2001-01-26) page 6, line 10 -page 8, line 18 ---	1, 12, 40-54
A	WO 98 55671 A (GRZEGORY IZABELLA ;KRUROWSKI STANISDAW (PL); WROBLEWSKI MIROSDAW () 10 December 1998 (1998-12-10) the whole document ---	1, 12, 40, 53
A	KETCHUM D R ET AL: "Crystal growth of gallium nitride in supercritical ammonia" JOURNAL OF CRYSTAL GROWTH, NORTH-HOLLAND PUBLISHING, AMSTERDAM, NL, vol. 222, no. 3, January 2001 (2001-01), pages 431-434, XP004314417 ISSN: 0022-0248 cited in the application the whole document ---	1, 12, 40, 53

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
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- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA

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Cook, S

INTERNATIONAL SEARCH REPORT

International Application No

PCT/00077

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DWILISKI ET AL: "AMMONO method of BN, AlN and GaN synthesis and crystal growth" MRS INTERNET JOURNAL NITRIDE SEMICONDUCTOR RESEARCH, 'Online! vol. 3, no. 25, 1998, XP002235467 Retrieved from the Internet: <URL: http://nsr.mij.mrs.org/3/25> 'retrieved on 2003-03-20! cited in the application the whole document ---	1,12,40, 53
A	US 6 177 057 B1 (PURDY ANDREW P) 23 January 2001 (2001-01-23) ---	
A	YANO M ET AL: "CONTROL OF NUCLEATION SITE AND GROWTH ORIENTATION OF BULK GAN CRYSTALS" JAPANESE JOURNAL OF APPLIED PHYSICS, PUBLICATION OFFICE JAPANESE JOURNAL OF APPLIED PHYSICS. TOKYO, JP, vol. 38, no. 10A, PART 2, 1 October 1999 (1999-10-01), pages L1121-L1123, XP000891127 ISSN: 0021-4922 ---	
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 05, 30 April 1998 (1998-04-30) & JP 10 007496 A (HITACHI CABLE LTD), 13 January 1998 (1998-01-13) abstract ---	
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 09, 30 September 1997 (1997-09-30) & JP 09 134878 A (MATSUSHITA ELECTRON CORP), 20 May 1997 (1997-05-20) abstract ---	
A	AOKI M ET AL: "Growth of GaN single crystals from a Na-Ga melt at 750C and 5MPa of N2" JOURNAL OF CRYSTAL GROWTH, NORTH-HOLLAND PUBLISHING CO. AMSTERDAM, NL, vol. 218, no. 1, 1 September 2000 (2000-09-01), pages 7-12, XP004214603 ISSN: 0022-0248 ---	

-/--

INTERNATIONAL SEARCH REPORT

International Application No

PCT/ [REDACTED] 2/00077

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	YAMANE H ET AL: "POLARITY OF GAN SINGLE CRYSTALS PREPARED WITH NA FLUX" JAPANESE JOURNAL OF APPLIED PHYSICS, PUBLICATION OFFICE JAPANESE JOURNAL OF APPLIED PHYSICS. TOKYO, JP, vol. 37, no. 6A, PART 1, June 1998 (1998-06), pages 3436-3440, XP001110371 ISSN: 0021-4922 -----	
A	GB 2 326 160 A (HITACHI CABLE) 16 December 1998 (1998-12-16) -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP/2000/00077

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
FR 2796657	A	26-01-2001	FR	2796657 A1	26-01-2001
WO 9855671	A	10-12-1998	PL AT DE DE EP JP WO US	320392 A1 211189 T 69803067 D1 69803067 T2 0986655 A1 2002513375 T 9855671 A1 6273948 B1	07-12-1998 15-01-2002 31-01-2002 18-07-2002 22-03-2000 08-05-2002 10-12-1998 14-08-2001
US 6177057	B1	23-01-2001	NONE		
JP 10007496	A	13-01-1998	NONE		
JP 09134878	A	20-05-1997	NONE		
GB 2326160	A	16-12-1998	JP DE GB GB JP US	11060394 A 19826003 A1 2333520 A ,B 2333521 A ,B 11189498 A 6270569 B1	02-03-1999 24-12-1998 28-07-1999 28-07-1999 13-07-1999 07-08-2001

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C30B9/00 C30B29/40

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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A	WO 98 55671 A (GRZEGORY IZABELLA ;KRUkowski STANISDAW (PL); WROBLEWSKI MIROSDAW () 10 December 1998 (1998-12-10) the whole document	
A	US 6 177 057 B1 (PURDY ANDREW P) 23 January 2001 (2001-01-23)	-/-

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/PL 03/00040

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
FR 2796657	A	26-01-2001	FR	2796657 A1		26-01-2001
WO 9855671	A	10-12-1998	PL AT DE DE EP JP WO US	320392 A1 211189 T 69803067 D1 69803067 T2 0986655 A1 2002513375 T 9855671 A1 6273948 B1		07-12-1998 15-01-2002 31-01-2002 18-07-2002 22-03-2000 08-05-2002 10-12-1998 14-08-2001
US 6177057	B1	23-01-2001		NONE		
JP 10007496	A	13-01-1998		NONE		
GB 2326160	A	16-12-1998	JP DE GB GB JP US	11060394 A 19826003 A1 2333520 A ,B 2333521 A ,B 11189498 A 6270569 B1		02-03-1999 24-12-1998 28-07-1999 28-07-1999 13-07-1999 07-08-2001

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/00061

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H01S5/343 H01S5/16

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 H01S

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EPO-Internal, PAJ, INSPEC

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A	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 01, 31 January 1996 (1996-01-31) & JP 7 249830 A (HITACHI LTD), 26 September 1995 (1995-09-26) cited in the application abstract	1,2,6-12
A	EP 0 949 731 A (MATSUSHITA ELECTRONICS CORP) 13 October 1999 (1999-10-13) the whole document	1,2,6-12
A	& US 6 249 534 B1 (HASHIMOTO TADAO ET AL) 19 June 2001 (2001-06-19) the whole document	1,2,6-12
		-/-

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP 7249830	A	26-09-1995	NONE			
EP 0949731	A	13-10-1999	DE DE EP JP TW US	69900953 D1 69900953 T2 0949731 A2 2000049410 A 419872 B 6249534 B1		11-04-2002 04-07-2002 13-10-1999 18-02-2000 21-01-2001 19-06-2001
US 6249534	B1	19-06-2001	DE DE EP JP TW	69900953 D1 69900953 T2 0949731 A2 2000049410 A 419872 B		11-04-2002 04-07-2002 13-10-1999 18-02-2000 21-01-2001
JP 2137287	A	25-05-1990	NONE			
FR 2796657	A	26-01-2001	FR	2796657 A1		26-01-2001

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